

THAT WHICH IS CLAIMED:

1. An apparatus for testing a switch comprising:  
a stage upon which the switch is mounted;  
5 an actuator for actuating the switch to thereby alter a state of the switch;  
a positioning device for controllably positioning at least one of said actuator and said stage relative to the other such that said actuator actuates the switch;  
and  
10 a measurement device for monitoring travel of at least one of said actuator and said stage and for also monitoring an electrical condition of the switch as the state of the switch is altered.
2. An apparatus according to Claim 1 wherein said measurement device  
15 is adapted to monitor a measure representative of an electrical resistance between at least two contacts of the switch.
3. An apparatus according to Claim 1 wherein said measurement device  
is adapted to monitor hysteresis of the switch as the state of the switch is again altered  
20 so as to return to an initial state.
4. An apparatus according to Claim 1 wherein the switch is one of a single throw switch and a double throw switch, and wherein said measurement device  
monitors pre-travel, differential travel and over-travel of the switch.  
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5. An apparatus according to Claim 1 wherein said actuator comprises an actuator shaft.
6. An apparatus according to Claim 5 wherein said actuation shaft  
30 comprises a load cell for obtaining a proportional electrical measure of force applied to the switch by said actuation shaft.

7. An apparatus according to Claim 5 wherein said positioning device comprises a micrometer for controllably positioning said actuation shaft relative to the switch.

5 8. An apparatus according to Claim 1 wherein said actuator comprises a magnetic field generator for actuating the switch.

9. An apparatus according to Claim 1 further comprising:  
a base; and  
10 an upstanding member mounted upon said base and adapted for movement in a first direction relative to said base, wherein said stage is mounted to said upstanding member and adapted for movement in a second direction relative to said upstanding member.

15 10. An apparatus for testing a switch comprising:  
a stage upon which the switch is mounted;  
a micrometer assembly comprising:  
an actuator shaft for actuating the switch to thereby alter a state  
of the switch; and  
20 a micrometer for controllably positioning said actuation shaft relative to the switch such that said actuation shaft actuates the switch; and  
a measurement device for monitoring an electrical condition of the switch as the state of the switch is altered.

25 11. An apparatus according to Claim 10 wherein said measurement device also monitors travel of said actuation shaft.

12. An apparatus according to Claim 11 wherein the switch is one of a single throw switch and a double throw switch, and wherein said measurement device  
30 monitors pre-travel, differential travel and over-travel of the switch.

13. An apparatus according to Claim 10 wherein said measurement device is adapted to monitor a measure representative of an electrical resistance between at least two contacts of the switch.

14. An apparatus according to Claim 10 wherein said measurement device is adapted to monitor hysteresis of the switch as the state of the switch is again altered so as to return to an initial state.

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15. An apparatus according to Claim 10 further comprising:  
a base; and  
an upstanding member mounted upon said base and adapted for movement in a first direction relative to said base, wherein said stage is mounted to said upstanding member and adapted for movement in a second direction relative to said upstanding member.

16. An apparatus according to Claim 10 wherein said actuation shaft comprises a load cell for obtaining a proportional electrical measure of force applied to the switch by said actuation shaft.

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17. An apparatus according to Claim 10, further comprising a linear displacement transducer for providing an electrical representation of a position of the actuator shaft.

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18. An apparatus for testing a switch comprising:  
a mounting assembly comprising:  
a base;  
an upstanding member mounted upon said base and adapted for movement in a first direction relative to said base; and  
a stage upon which the switch is mounted, wherein said stage is mounted to said upstanding member and adapted for movement in a second direction relative to said upstanding member;  
an actuator for actuating the switch to thereby alter a state of the switch; and  
a positioning device for controllably positioning at least one of said actuator and said stage such that said actuator actuates the switch.

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19. An apparatus according to Claim 18 wherein said actuator comprises an actuation shaft.

20. An apparatus according to Claim 19 wherein said actuation shaft  
5 comprises a load cell for obtaining a measure of force applied to the switch by said actuation shaft.

21. An apparatus according to Claim 19 wherein said positioning device  
comprises a micrometer for controllably positioning said actuation shaft relative to the  
10 switch.

22. An apparatus according to Claim 18 further comprising:  
a base; and  
an upstanding member mounted upon said base and adapted for  
15 movement in a first direction relative to said base, wherein said stage is mounted to said upstanding member and adapted for movement in a second direction relative to said upstanding member.

23. An apparatus according to Claim 18 further comprising a measurement  
20 device for monitoring an electrical condition of the switch as the state of the switch is altered.

24. An apparatus according to Claim 18 wherein said measurement device  
also monitors travel of said actuation shaft.

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25. An apparatus according to Claim 24 wherein the switch is one of a single throw switch and a double throw switch, and wherein said measurement device monitors pre-travel, differential travel and over-travel of the switch.

26. An apparatus according to Claim 18 wherein said measurement device  
30 is adapted to monitor a measure representative of an electrical resistance between at least two contacts of the switch.

27. An apparatus according to Claim 18 wherein said measurement device is adapted to monitor hysteresis of the switch as the state of the switch is again altered so as to return to an initial state.